

xylol under the tap before pouring in the paraffin. The latter step requires only slight practice to be successful, and indeed the only effect of a too rapid pouring in of the melted paraffin seems to be the formation of strings of paraffin reaching down into the xylol. If the paraffin plug needs to be removed at any time, this can be accomplished readily by forcing through it a hot needle, the tip of which has been bent at right angles. The needle after cooling for an instant may be turned slightly and the plug pulled from the vial.—T. H. GOODSPEED, *University of California*.

ADAPTATION AND NATURAL SELECTION

I wish to correct a false impression which my paper on the agency of fire in the propagation of the longleaf pines (BOT. GAZ. 64:497-508. 1917) has left in the minds of some of my correspondents, to whom it seems that the conclusions there reached might lead to the absurd economic paradox that forest fires should be encouraged for the conservation of our pine lumber supply. As a matter of fact, all the evidence produced in that paper was intended to show that it is their *adaptation for resistance* to fire which insures the survival of this species. The action of natural selection in this case, as in practically all others that have come under my observation, is negative and indirect. It preserves not by selection of the fit, but by elimination of the unfit, thus giving the best adapted a free hand in the struggle for existence.

In calling attention, therefore, to the peculiar relation between the longleaf pine and fire, there was no thought of suggesting that we should imitate the method of nature; but having learned that a clean forest floor and plenty of sunshine are essential conditions for the propagation of the longleaf pine, these conditions may be secured by other means than fire, such as judicious cutting and thinning, and a periodic cleaning up of the forest floor. Whether a well guarded ground fire at the proper season might not be a useful aid in accomplishing this last purpose is a question which must be left for the practical forester to decide.—E. F. ANDREWS, *Rome, Ga.*